Flightfax
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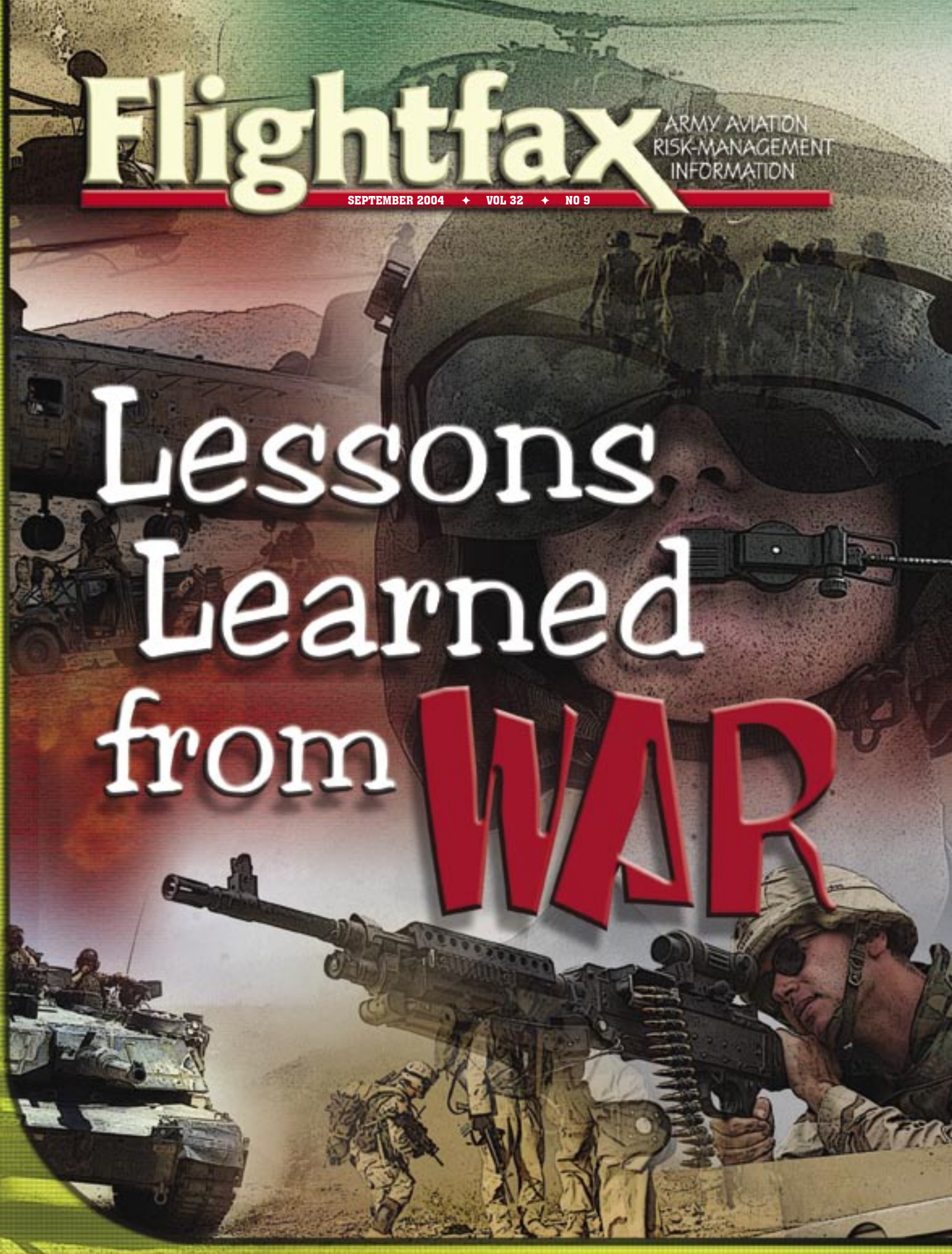

Lessons Learned from WAR

Flightfax

ARMY AVIATION RISK-MANAGEMENT INFORMATION

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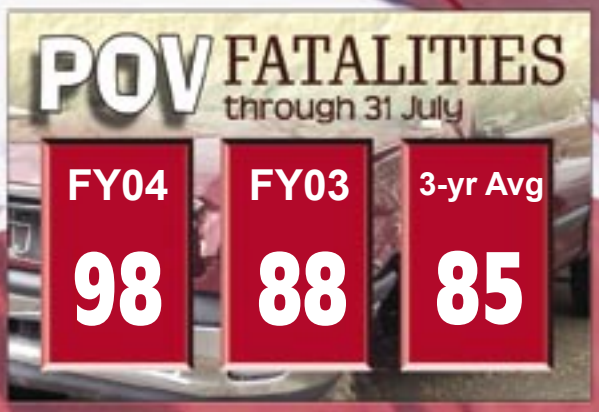

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JOSEPH A. SMITH
Brigadier General, U.S. Army
Commanding

DASAF's Corner

FROM THE DIRECTOR OF ARMY SAFETY

The Next Greatest Generation

Grasp the Knowledge, Sharpen the Skills, and Retain the Abilities

On a recent trip to Washington, D.C., the sight of the World War II Memorial brought clarity to a message I've heard in the last several weeks. The World War II Memorial honors the 16 million Americans who served in the armed forces, the more than 400,000 who died, and all who supported the war effort from home. Symbolic of the defining event of the 20th century, the memorial is a monument to the spirit, sacrifice, and commitment of the American people. On 27 May 2004, the public was invited to the unveiling ceremony to view this tribute to America's "Greatest Generation."

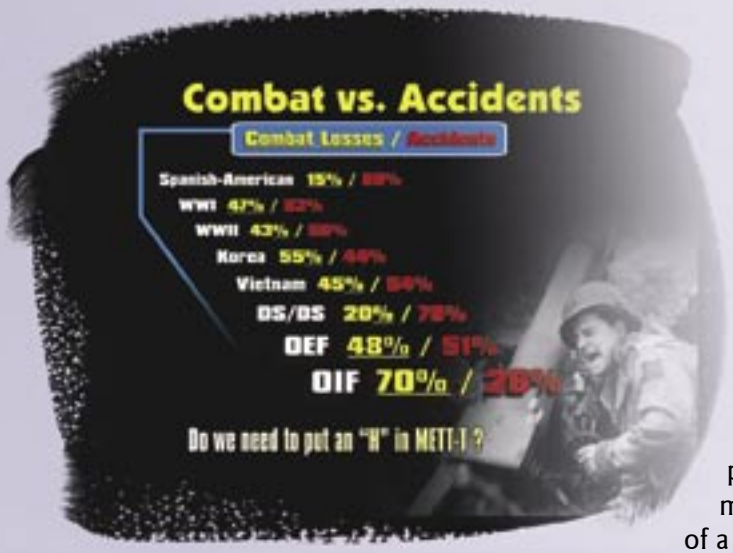
As we look to the future, the Global War on Terrorism is demanding that our 21st century Army and its Soldiers embrace the spirit of the Greatest Generation. We are an incredible Army—resourced for success and transforming to meet tomorrow's challenges. Our Soldiers are returning from battle with a degree of knowledge and experience that, at a minimum, would take years of schooling and rigorous training to match. Our duty is to grasp the knowledge, sharpen the skills, and retain the abilities of the Army's newest generation.

Grasp the knowledge of our junior leaders and coach "composite risk." By focusing energy on our current combat leaders, we can simultaneously capture lessons learned and implement control measures that will mandate how warfighting and training will be conducted in the 21st century. Specifically, we must not lose the insight of the leaders who understand tactical risk *firsthand* or those who experienced accidental risk *personally*. We are not there yet. After visiting several units in Iraq last month, it was clear that we still have a "mental barrier" to blending tactical and accidental risks into a "composite" picture. That is, to view the risk of losing combat power holistically. When you are dead, you're dead—regardless of whether a bullet or an accident took you out of play. Our Mission Ready Exercise (MRX), Pre-deployment Site Survey (PDSS), Relief in Place (RIP), and Military Decision-Making-Process (MDMP) must come together in a way that not only captures lessons learned from our junior leaders, but also coaches the art of "composite" risk mitigation.

When I ask new convoy commanders about their biggest threat, most say with great confidence "IEDs!" (Improvised Explosive Devices). When I ask new air mission commanders what their biggest threat is, they say without a doubt it's "MANPADS!" (Man-Portable Air Defense System) and "RPGs!" (Rocket Propelled Grenades). Ask a Soldier in the mess tent, he'll say "rocket attacks in tent city." Sound familiar?

Approaching Soldiers hardened by combat, I often get a different response. The seasoned convoy commander tells me "fatigue" is his number one hazard because he's mitigated the tactical risks with TTPs (Tactics, Techniques, and Procedures). The seasoned air mission commander tells me that a "mid-air collision" is his number one hazard for the same reason. **These Soldiers are adequately balancing the composite risk—"they get it!"** The weathered cook who tells me, "I've heard the rounds go off … and I'm more concerned about getting hit by a negligent discharge (ND) than shrapnel from a rocket attack," also "gets it"—there are far more NDs than rocket attacks.

We must not return home to the same old FTX and common task training (CTT). Our rising leaders are more than capable of training and risk managing with a few simplicities, such as fighter management, solid pre-mission planning, and strong troop-leading procedures. These leaders have personally experienced combat and will learn to defeat both enemies of composite risk.



Sharpen the skills of our already highly trained and hardened Soldiers. Let's get the job done and be smart about it by allowing more flexibility to deal with the less-predictable tactical risk. The Chief of Staff, Army, said, "We cannot be risk averse, but we can be smart about managing risk." The best way is to sharpen the skills of our junior leaders and provide them with expert knowledge. They are skilled, seasoned warriors who will get the job done.

We must capture the importance of pre-mission planning for every mission. Nearly all infantrymen can tell me the finer points of actions on the objective or the details of a cordon and search, but when asked about the vehicle lineup at the start point and the movement, I get the "deer in the headlights look." Time constraint is the most common cause of not following troop-leading procedures. We must institutionalize doing the basics right and make leaders aware of the online Risk Management Information System (RMIS). Refining risk management training prior to deployment will provide more flexibility to deal with the less predictable tactical risk in war. Combat is fluid and requires sharpened leader skills for both air and ground operations. How often have you flown a complex air assault mission only to come home and realize there was little or no planning to get you through the forward arming refuel point (FARP) and parking? Let's get smart about training the basics.

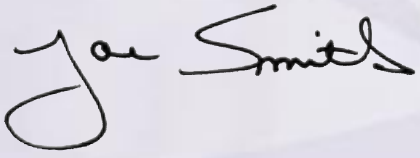
I'm not asking you to change focus in combat. On the contrary, I'm asking that you sharpen skills while in training to allow more planning time for actions on the objective. We need standardized battle drills, SOPs, and reporting procedures across our Army. When an organization understands the routine drills, then leadership can focus its energy on addressing variables. Training to standard the routine missions, such as vehicle movement, FARP operations, and formation flight over urban areas at low illumination will allow even more time for focused mission planning. Mission, enemy, terrain, troops and time available (METT-T) then can be focused to your actions on the objective and the variables of composite risk.

Retain the abilities of your "A" student Soldiers. Soldiers in vehicle accidents account for more than two-thirds of our non-combat losses. Units that "get it" have significantly lower losses. I Corps CSM Barry Wheeler often refers to an "A-B-C" scale of Soldier performance. I submit that the "C" Soldiers will return from deployment and go back to the old ways of driver training and risk management. The "A" NCO will understand that driving a military vehicle has evolved into a basic Soldier skill—an evaluated CTT proficiency. The "A" leaders will train to standard based upon the lessons learned and the composite risk.

The same holds true for weapons qualification/handling and aviation training. The "A" students of modern ground warfare will require the use of Individual Protective Equipment (IPE) and ARMOX® for all qualification courses and convoy live-fire exercises. The "A" student aviators will demand training standards that reflect combat flying. Zero illumination with a hard-deck altitude is common practice in war, and we must implement training at home to retain this ability. We must not return home and allow organizations to return to the old ways. Instead, we must sustain the momentum and build upon the abilities of our returning warriors.

In World War II, America's Army lost 56 percent of its casualties to accidents. When you look at the nearly 235,000 Army Soldiers who died during that conflict, it puts 2004's 26 percent accidental death rate into perspective. However, the current number of combat losses versus accidental deaths is still at an unacceptable rate. I review every reported accident in our Army… all but a handful were preventable.

During my recent travels, a captain asked **"Should there be an H in METT-T?"** He said the H would singularly examine (H)azards associated with the mission. In 15 months of his deployments, he had seen combat in Afghanistan and Iraq and knew *firsthand* about tactical risk, and had also felt the *personal* impact of accidental risk. He gets it!!! We need to retain our young leaders like this and use their experience. The Army depends upon the knowledge, skills, and abilities of its returning warriors. Balancing accidental risk and tactical risk is the future of risk management, a future that is in the hands of our young leaders – our next Greatest Generation.



Flight Profiles in an Urban Environment

CPT Adib Khoury
4th Squadron, 2d Armored Cavalry Regiment
Fort Polk, LA

"Nomad 14, this is Nomad 6. Did you see that group of people behind us? Approximately 10 personnel gathered on the road, one white pickup truck, and one sedan."

"Negative."

"OK, we're going back to take a closer look. Pick up my six."

"They're scattering! One, two ... at least two personnel with AK-47s trying to hide behind the trees ... unknown equipment in the back of the truck ... four personnel running toward the farmhouse ... two running down the road ... two getting in the truck ... two getting in the sedan. I'll stay with the truck and the sedan; you stay with the guys in the farmhouse."

Trail to lead: "WIRES!"

Lead to Trail: "Thank you." (Both crewmembers were looking down at a route during a route reconnaissance.)

"Nomad 6, this is Nomad 14. We're slowing back, there's a bird in the cockpit with us."

"Did it come through the windscreen or the door?"

"Chin bubble."

"Roger, RTB (return to base) and get the backup aircraft."

Survival from the enemy

In an urban environment, manmade and natural obstacles are real threats and must be taken into consideration when developing appropriate flight profiles. Throughout the course of Operation Iraqi Freedom (OIF), helicopters have been lost to small arms fire, rocket-propelled grenades (RPGs), surface-to-air missiles (SAMs), mid-air collisions, and collisions with obstacles. The above radio transmissions actually happened and demonstrate the wide variety of threats faced during aviation operations in an urban environment.

Tactical flight in an urban atmosphere presents many challenges because, in an effort to avoid being killed by the enemy, you might end up killing yourself. This article will discuss current Army doctrine on aviation operations in an urban environment, outline the current threat in Baghdad, Iraq, and share some thoughts and tactics, techniques, and procedures we currently are using during daily aviation operations in Baghdad.

Current doctrine

Field Manual (FM) 3-06.1, *Aviation Urban Operations*, is a fairly comprehensive manual and a must-read for any aviation unit preparing for operations in an urban environment. On enhancing survivability, FM 3-06.1 states:

"Remaining unseen visually and

electronically is the most effective method of preventing an engagement by hostile forces… 'High' versus 'low' is a matter of carefully weighing the factors, making an informed decision, and remaining flexible if the situation dictates a profile change… Distilled to its most basic elements, the issue is this: Do aircrews want brief exposure to hostile weapons at close range or continuous enemy observation and exposure to weapons at extended slant range?"

From a purely tactical perspective, low altitudes mixed with high airspeeds provide the greatest chance for survivability. Aircrews should avoid true nap-of-the-earth (NOE) flight, as it exposes the aircraft to a greater potential for engagements. In other words, flying at the airspeeds associated with NOE flight as outlined in the aircrew training manual increases your vulnerability to enemy fire. However, aircrews also must consider the threat to their survivability posed by the vast hazards abundant in an urban environment (wires, towers, antennas, birds, buildings, etc.). To buffer obstacle and hazard clearance, a higher flight altitude (300 to 500 feet above ground level) over a city, day or night may be necessary. When determining an appropriate flight profile, aircrews should consider the following:

1. Mission requirements
2. Flight hazards
3. Small arms threat
4. Terrain relief and building height in and around the area
5. Density of structures
6. Accessibility and security of high, dominant rooftops
7. SAM threat

Special considerations must also be given to night vision goggle operations. To prevent the loss of visual contact with other aircraft among ground lights, a non-traditional vertical "stack-down" formation (trail flies lower than lead) may be required. Also, due to the abundance of manmade ambient light, aircrews should prepare to make frequent and rapid transitions from aided to unaided flight during urban operations.

Is the benefit of flying lower and slower worth the risk of being shot down? We re-addressed this question as the number of incidences of aircraft taking fire throughout Iraq increased in November and December 2003. The conclusion we reached is that it depends on the mission.

Enemy situation

The enemy situation in Iraq is very fluid and constantly changing. In the 9 months we've been deployed, the threat has developed from mostly criminal-type activity to organized resistance aimed at disrupting coalition forces and missions. The enemy is smart and constantly adapting to our tactics. We've seen "baited" ambushes where an initial attack against coalition forces is merely a setup to gain contact with ground or air quick reaction forces (QRFs). We've had local nationals try to "talk" to aircrews on unsecured, single-channel, air traffic control frequencies. We've experienced success detaining or killing enemy forces, confiscating their money for funding operations, and seizing their weapons caches. They, in turn, rob banks to fund new weapons purchases and anti-coalition attacks.

Specifically related to aviation operations, the majority of the attacks against aircraft haven't been in the heart of the cities but rather near airfields, over objectives, and on route structures at mandatory reporting points. The enemy has access to small arms weapons that include AK-47s and RPKs (Soviet light machine guns), RPGs, and an abundance of SAMs (over 7,000 SA-7b missiles still are believed to be in enemy hands). Most of the attacks against aircraft have been against high-payoff targets such as troop transport aircraft rather than scout or attack aircraft.

The urban environment provides many advantages to the enemy. It's difficult to fight an organized, uniformed army in an urban area, but it's much more challenging to fight an enemy that easily blends with the population. An enemy that can ambush a convoy from

rooftops along an entire city block one minute and happily wave to aircraft the next, with no weapons in sight, is extremely difficult to engage. The abundance of visual cues mixed with the fact that the majority of the population is friendly toward coalition forces also presents aircrews with a difficult task of identifying friend vs. foe.

Current aviation operations in Baghdad

The underlying assumption in current Army doctrine on urban aviation operations seems to be that steady state operations (scout weapons teams flying over the same parts of the city 15 hours a day for a year) in an urban environment will not be conducted. The recommendation is to set up base camps outside urban areas, fight the enemy at specific objectives within the city, and then return to base camp or continue to advance beyond the city.

Steady state aviation operations within a city increase vulnerability to enemy fire for a number of reasons. First, the control measures typically implemented to de-conflict aviation assets (air routes, airlift command posts, set traffic patterns and altitudes, lighting requirements, etc.) are all necessary, but lead to predictable patterns the enemy can pick up on. Second, a motivated and well-equipped enemy only has to be patient and wait for an opportunity to engage an aircraft; they are over the city every day.

Our tactics have developed continually over the course of the deployment. Before deploying, we discussed how to fly tactically in a city to minimize risk. We talked about minimum airspeeds of 60 knots to reduce vulnerability to small arms fire. We talked about flying low and fast. When we deployed we implemented a hard deck of 300 feet at night to avoid obstacles (wires, towers, antennas, etc.).

But, as we flew missions, we found that it's nearly impossible to see anything at night while flying at 300 feet and 60 knots. After about 100 hours flying over the same parts of the city, we became very familiar with where all the obstacles were and now regularly descend below 300 feet to better observe objectives, routes, named areas of interest (NAIs), etc. Also, as we realized the threat wasn't what we were expecting (one bullet hole in one aircraft in more than 3,000 hours flown on seven aircraft), we started slowing down to conduct a more thorough reconnaissance.

There has to be a continuous evaluation of benefit vs. risk. Is the benefit of flying lower and slower worth the risk of being shot down? We re-addressed this question as the number of incidences of aircraft taking fire throughout Iraq increased in November and December 2003. The conclusion we reached is that it depends on the mission. Do everything you can within the confines of the mission to make yourself a hard target. When transitioning from point to point, fly low and fast during the day and a little higher (300 feet) at night. If conducting reconnaissance, fly low and slower to ensure you're able to be thorough (again, an abundance of visual cues makes reconnaissance difficult).

Constantly vary your altitude and airspeed throughout all flights, regardless of the mission. Vary your scheme of maneuver to avoid predictability. Use different routes—a straight line might be faster but makes you more vulnerable. The nature of flight in an urban area might put you in the wrong place at the wrong time and you won't even know you're being engaged until it's too late. Do everything you can to avoid predictability.

When determining your flight profile in an urban environment, you cannot limit yourself to strictly tactical considerations. The threat from the enemy is real, but so is the threat from obstacles, both natural and manmade. There has to be a balance between the two threats. Your greatest chance for survivability when conducting operations in or around a city is to conduct a constant analysis of benefit vs. risk. You also must adjust your flight profile accordingly to accomplish your mission safely. ♦

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EMERGENCY (PROCEDURES) in the Combat Zone

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We all recognize that if there is one nonnegotiable area of information that all aviators must know without error, it would be the underlined steps to handle aircraft emergencies contained in Chapter 9 of all aircraft operators manuals. Most of these emergency procedures end with either LAND AS SOON AS POSSIBLE or LAND AS SOON AS PRACTICABLE. In the classroom, at the table or in flight in a simulated tactical environment the correct response to an IP's query about how to handle certain emergencies is very straightforward; that is, the correct response is in accordance with Chapter 9 underlined steps. Now shift your thinking a little and put yourself in the contemporary operating environment (COE) with a very real enemy, whose uniform and position on the battlefield is unknown and ask yourself, "What does LAND AS SOON AS POSSIBLE or PRACTICABLE mean? Or better yet, WHERE do I LAND AS SOON AS POSSIBLE or PRACTICABLE?

First, the definition … LAND AS SOON AS POSSIBLE is defined as a "landing without delay at the nearest suitable area where the primary consideration is to assure the survival of the occupants." The definition begs two questions that need to be explored in a bit more depth in the combat zone. What and where is a "suitable" area? What things other than aircraft operation are considered in "the survival of the occupants?" Let me address the first question. What does "suitable" mean? Most aircrew training manuals (ATMs) contain the same considerations for terrain flight approach.

- Suitability (i.e., dust, size, slope).
- Long axis (allows for more space and time to make decision to abort).
- Obstacles (on approach path and in the LZ).
- Wind direction (land into the wind if possible to reduce power requirements).
- Tactical situation (consider METT-TC).

The last step, tactical situation, is a step that is often glossed over and not fully discussed during training and evaluation by instructor pilots. In considering METT-TC, the "E" or "enemy" situation must be clearly understood. As well, the "T" or "troops," that is, the friendly situation must be clearly understood.

Here are two examples of real situations that have happened to me personally over the past year in Operation Iraqi Freedom.

While flying night vision goggles (NVGs) in support of ground forces conducting an urban raid, I received a CHIPS XMSN SUMP caution message. The operator's manual states the action for this is "If no successful burnoff, LAND AS SOON AS POSSIBLE." There really wasn't any physically suitable area to land in

the urban neighborhood below, and the enemy situation was unknown. The friendly situation on the ground below me was rapidly evolving and my view of friendly forces was obscured by the urban terrain. I knew there was a friendly brigade support area (BSA) that was about a 4-minute flight away, but I was unfamiliar with the LZ there and estimated it would take me a couple of minutes to find the LZ and execute an approach. The aviation BSA was about an 8-minute flight away and I was familiar with the LZ there, so I elected the latter and made that 8-minute flight. The flight path I chose included flying over known friendly checkpoints and smaller support areas. Did I do the right thing?

In this second example, I was flying trail in a team of two conducting NVG counter-mortar and counter-rocket reconnaissance in the suburban environment when my lead aircraft announced to me that he smelled fuel. Although there is no defined action for smelling fuel, I think it is obvious that you should probably LAND AS SOON AS POSSIBLE. The enemy situation below was unknown. We were about 4 minutes away from the aviation BSA, and our flight path would take us directly over a friendly maneuver BSA, but neither of us was familiar with the LZ, so we elected to make the flight to home base. During that flight, I advised the lead PC not to make any power changes and I attempted to view his aircraft for signs of fluid on the fuselage. I didn't observe any fluid, and the flight was uneventful … at least until we were hovering into parking and he turned on his anti-collision light. At that moment I could see the atomized spray of fuel around his aircraft and advised the PC to land immediately and perform an emergency shutdown. He was two steps ahead of me … as the crew was already exiting the aircraft when I made the call. Did we do the right thing?

It is fairly obvious to me now that had I been more familiar with the friendly BSA LZs, I could have landed sooner and been more in keeping with the definition of LAND AS SOON AS POSSIBLE. We had always covered the locations of the friendly BSA LZs as options during our aircrew mission briefs, but few of us had ever actually been to the LZs. The lesson learned here is to know what your options are. Even to the point of knowing where friendly strong-points are in your area of operation. If possible, make approaches to all friendly LZs when there is no emergency as this will pay off if you ever actually have one. It is also important to understand the aircraft systems associated with emergency conditions. Having a thorough understanding of these systems will help you make a more informed decision about how long you may be able to delay the landing. Each emergency should be handled in relation to the systems involved and the exposure to the risk of delaying an underlined procedure or executing slightly different emergency procedures in a hostile environment. I am not advocating that you should second guess the action steps in the operator's manual where it is clearly stated to "land without delay," but with a very uncertain enemy situation, you may have no option but to delay the landing for some period of time. After all, the enemy must be considered a role-player in the "survival of the occupants."

Overall, remember these simple points—

■ **Commanders**… Ensure that aircraft emergencies during mission execution are thoroughly covered during aircrew mission briefings.

■ **SPs and IPs**… Stop glossing over the importance of understanding METT-TC when considering a terrain flight approach—especially in a real, uncertain tactical environment—and continue to challenge aviators in their understanding of aircraft systems and sub-systems.

■ Finally, **PCs and PIs**… Make sure you know what and where your options are for "landing without delay" and take the time when there is no emergency to familiarize yourself with available LZs. ♦

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30mm Area Weapon System

Bob Frazier
and
Neale Bruchman

During our recent experience in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF), the Apache Attack Helicopter Project Office learned of several field reports of incidents where the aircraft received damage while operating the 30mm area weapon system (AWS). A basic understanding of these malfunctions will allow aircrews and maintenance personnel to operate the weapon system with confidence.

What will occur if you experience one of these types of failures? First, let us explain the three different types of incidents we have seen: low-order in-bore detonation, hangfires, and bullet-on-bullet.

Low-order in-bore detonation

During an in-bore incident, a high-explosive, dual-purpose (HEDP) round explodes approximately 10 inches up the barrel from the breech, bulging the barrel, in some cases bursting the barrel and blowing fragments of the projectile and barrel towards the aircraft. Fragments from the detonation can puncture the aircraft fuselage.

An in-depth root cause or fault tree analysis was conducted at TACOM-ARDEC for the in-bore detonation failure modes. The results of this analysis, which were verified by testing, showed that the most likely cause for the in-bore detonation malfunction was a failure of the fuze spitback crimp due to weakening of defective crimp or a loose fuze or a combination of these defects. This failure permits metal components in the cartridge to fall back and initiate the charge within the cartridge while the round is still traveling down the gun barrel (approximately 10 inches from the gun breech).

Since 2002, five incidents have been reported where an in-bore detonation resulted in a barrel bulging or rupturing *(see photos 1 through 4)*.

Photo 1 (top). Bulged Barrel
Photo 2 (bottom). Ruptured Barrel

The ordnance community discussed the possibility that an in-bore event can occur and the gun will still function. In such a case, the barrel would bulge but no gun hardware would fail. There have in fact been five reported cases from the field in which a bulged barrel was found on a gun, and the gun was fully functional. A bulge would certainly weaken the barrel and leave it much more susceptible to rupturing if another event occurs. The technical community believes that it is likely in at least one incident, an aircraft may have experienced an undetected bulged barrel, and then suffered an additional event which resulted in the rupture of the barrel. Metallurgical analysis of the ruptured barrel shown in photo 2 determined that the barrel

Photo 3 (top) and Photo 4 (middle). Fuselage Damage

Photo 5 (bottom). Hangfire Mechanism on M230 Chain Gun

had experienced two separate, extremely high pressure events, the second likely resulting in the rupture of the barrel. Because of the potential for a bulged barrel to go undetected, Aviation Safety Action Message (AH-64-04-ASAM-02) was published 11 Mar 04, requiring an initial inspection of the barrel and flash suppressor of the M230 gun system; a thru-flight inspection of the barrel and flash suppressor when the M230 gun system is fired; a recurring inspection by armament personnel during rearming procedures when the M230 gun system is fired; and provide advance notice of pending safety-of-use message and TM changes relating to the M230 gun system.

Hangfires

Although hangfires are typically thought of as routine, there have been significant increases in the number of incidents. In the case of a hangfire, a round is inserted into the chamber by the bolt carrier, but the ballistic function is not completed within the dwell time of the weapon, thus the round pressurizes while or after the breech bolt unlocks *(see photo 5)*. Results of a hangfire can vary from case fragments moving through the barrel with no damage to destruction of receiver and possible lodged projectile in barrel. No specific technical design characteristic has been identified to explain the increase in hangfire incidents. However, engineering judgment does lead the 30mm community to believe that the age of the ammunition could be a major contributor to this issue. Most of the 30mm high explosive (HE) that was initially fired during combat operations is in excess of 15 years old. The current designed shelflife of the round, as defined in the technical specifications, is a goal of greater than 10 years. To further resolve the issue, the ordnance community has performed ammunition surveillance and test firing. No indications of problems have been technically identified to date.

The ordnance community has contracted ATK Munitions to analyze 30mm HEDP samples. Five of the M789 HEDP lots that were returned from SWA are being torn down and examined. Additionally, the Apache PMO has contracted Boeing and ATK Weapons to perform a study on the 30mm AWS.

It is likely that the hangfire incidents are also increasing due to ammunition handling problems. In photos 6 through 9 on the next page, the ammunition has either come loose or is missing. Round punctures are most likely the result of mishandling, however the loose or missing fuzes are most likely due to missing or a failure of the thread lock. At least 20 reports of punctured cartridge cases have come back from the field since 2002.

Bullet-on-Bullet

The next type of event is the bullet-on-bullet impact. There have been two separate reports of incidents involving a round-on-round high-order detonation. This type of detonation is caused when a projectile, stuck in barrel, is struck by another projectile causing a catastrophic high-order detonation that severs the barrel. The possible chain of events leading to this incident involves an extremely late, perfectly-timed hangfire, contaminated

Photo 6. Punctured rounds-Bosnia

Photo 7. Punctured rounds-Afghanistan

Photo 8. Loose and missing fuzes

Photo 9. Barrel Damage - High-Order Detonation

propellant (factory issue), or a punctured round case with missing propellant. Both result in a significant loss of pressure, with the projectile lacking sufficient force to overcome the engraving force of the progressive barrel twist and exit the barrel.

This high–order detonation results in a severed barrel (immediately adjacent to the location of the lodged projectile) with heavy fragmentation (shrapnel). In one incident, shrapnel went up through the cockpit and impacted some flight controls, as well as piercing the windshield. No one was injured and the aircraft was one-time flown to home base.

Several actions have already been initiated to mitigate or eliminate the risk of these events from continuing to occur. First, 30mm HE ammunition for the Apache that was manufactured in the 1980s has been reclassified to a condition that restricts it from issue unless no other suitable stocks are available. These rounds are known to have the fuze design that is susceptible to having the spitback crimp failure. Approximately 500,000 new 30mm HE rounds containing the improved fuze design have been contracted for delivery, with the initial lot delivered in March 2004. Second, an investigation is currently being conducted to isolate the cause(s) of the hangfires and the bullet-on-bullet impact incidents. Older rounds that have been in the combat theater have been recalled back to the continental U.S. and are being torn down and analyzed for any signs of deterioration that would be a possible cause for one or both types of events. An analysis of the weapon system and the ammunition shipping and handling processes is also being conducted to determine if anything being done with respect to the weapon or the ammunition uploading into the aircraft could be causing these events. Early results from these analyses have failed to find a definitive cause for the incidents, but the investigation is continuing.

Through comprehensive investigations and engineering analysis, the possibility of one of these malfunctions has been greatly reduced. The PMO is confident this problem can be virtually eliminated with cooperation from the units in the field. Unfortunately, the PMO has been informed that there may have been more incidents that were unreported involving gun damage. In order for the technical community to properly analyze these types of events, units must report these events to both the aviation and munitions technical communities. ♦

—Mr. Frazier is the System Safety Manager for the Apache Attack Helicopter Project Manager's Office (AAHPMO), Huntsville, AL. Mr. Bruchman is the Chief of Systems Engineering Division for AAHPMO. Both can be contacted by calling DSN 897-4202 (256-313-4202) or e-mail bob.frazier@peoavn.redstone.army.mil or neale.bruchman@peoavn.redstone.army.mil.

Aviation Task Force, KFOR 5A Mission Complete

LTC Larie Wilson
2-104th Aviation
PAARNG

The first pure Army National Guard (ARNG) aviation rotation to Kosovo recently completed the mission with noteworthy results. The multi-unit and multi-state task force completed 7 months of service with the Multi-National Brigade (E), Kosovo Force (KFOR), logging 4,100 hours of mission support without any reportable accidents. No Class A through D aviation accidents happened during the 1,985 missions flown. This is a first for the KFOR.

The 18-aircraft task force consisted of a headquarters from the Pennsylvania ARNG HHC, 2-104th Aviation. UH-60 support was provided by the Alabama ARNG with Company A, 1-131st Aviation. AH-64 support came from the South Carolina ARNG with Company C, 1-151st Aviation. MEDEVAC support was provided by the 24th Medical Company (AA), a split-state unit from the Nebraska and Kansas ARNG. Each state brought a slice of maintenance, and Company E, 107th Aviation of the Tennessee ARNG provided ATS services.

The experience level and professionalism of each unit were keys to the accomplishment. The deployment in Kosovo began in July 2003 and ended in February 2004. The unit provided 24-hour mission support to the brigade's command and maneuver units (two American, one Greek, and one combined Polish/Ukrainian) throughout the rotation. In-depth planning, rehearsals, and detailed risk management that was more than three deep ensured success for the task force.

Another key to the unit's success was strict adherence to a 48-hour mission planning sequence. Missions inside that window were considered high- or extreme high-risk missions and were briefed at the appropriate level. This attention to detail and risk management top cover from the brigade chain of command ensured the crews' safety was paramount in the mission process.

My personal thanks go out to each Soldier of the task force for their part in this accomplishment. ♦

—LTC Wilson is the Commander, Task Force Aviation, KFOR 5A. He may be reached at DSN 491-8960 (717-861-8960), or by e-mail at larie.wilson@pa.ngb.army.mil.

WAR Stories

There I was...

CPT Patricia Baker
Marquette University

CPT Baker recently returned from a year-long Iraq command tour. For over a year, she was the commander of a VIP aviation unit. Needless to say, she has some pretty interesting stories to tell. Here are a couple of them...

Learn from my Mistakes—*speak*

On a long cross-country flight, one of my instructor pilots (IPs) and I were flying UH-60Ls in a flight of two. We were trail, heading south from Tikrit to Doha. While en route, Baghdad Control gave us clearance for our current heading of 160 and 5,000 feet.

The emphasis is on 5,000 feet in the middle of June in Iraq. At altitude, the temperature dropped to about 23°C, and we were cooking near the earth at 38°C. As we approached the 3-hour mark of our flight, I was still flying the aircraft and started to feel "funny." When I sat up straight in my seat, it made my head spin, and I fought the controls to keep us level at 5,000 feet and 130 knots. I decided to perform a quick test: I sat stick straight in my seat and pulled the helicopter into an immediate left turn. I realized immediately that I had a classic case of "the leans." I was smack dab in the middle of a spatial disorientation episode 5,000 feet over Iraq!

Luckily at that time, the lead aircraft called Talil for instructions to descend for a landing and refuel. However, I still had the leans, and now I needed to get the aircraft into a descent headed more to the left (east) to get us into Talil. I thought about just telling the IP that I had the leans and let him take the

controls, but I didn't. For one reason, I was going to take my pilot-in-command (PC) check ride in less than a month, and this very flight was the litmus test for the company standardization IP to see if I was ready. The second reason was I knew what to do to get out of it.

So, I told myself that the instruments were correct about 50 times in a row and by the time we were short final for refuel on alpha ramp, I was back to my normal self. When we were mission complete, I told the IP about what had happened. All he had to say was, "You sure were quiet on the way to Talil."

Another example...

The executive officer and I were on the flight schedule for a simple day, cross-country, two-ship, VIP mission to one destination and return to base. That's how it looked on our board in the command post—but that's most certainly not how it ended up. This was a typical ground-fog, dew-point-meets-temperature type of January day in northern Iraq. So, like good VIP pilots, we checked the weather every hour at 5 minutes to the hour. Finally, the ceiling lifted to 700 feet and visibility went up to a mile, but with areas that were intermittent.

Our two UH-60s left, lead flying our assistant deputy chief of staff. We were chase and flying empty. We didn't make it 15 nautical miles away from the airfield when we hit a ground fog wall. It started at the Tigris River and crossed our entire flight path. We tried to go over but promptly hit the cloud ceiling at 1,000 feet. So we tried going west to get back to the south and the east, but that didn't work either. As we were chattering on the radios about returning to base due to weather, we nearly had a mid-air with our sister ships—which were flying as a flight of three for the commanding general. Then we hit another ground fog wall, but this time there was nowhere to escape. So in we went.

I let him go a few more seconds, but then I sternly said, "Put THAT bar on THAT line and pull in exactly 75 percent torque!"

The look on the lieutenant's face was a pasty mix of dismal horror and insidious lack of confidence. He had always flown steady-handed with me on other less difficult flights and seemed to keep his wits. So, I let him go for it and gave him the controls. I merely stated after radioing our sister ship of our heading and altitude that he needed to climb and hold this heading.

Well, those were some tough instructions for my lieutenant just 4 months out of flight school. He pulled in 30 percent more torque and put the aircraft in a climb that made the bars behind the artificial horizon almost disappear. I let him go a few more seconds, but then I *sternly* said, "Put THAT bar on THAT line and pull in exactly 75 percent torque!" So, slowly, he did. And slowly we broke out of the cloud layer and saw Tikrit Airfield coming into sight.

That was another day where the takeoffs equaled the landings. ♦

—CPT Baker is the Recruitment and Scholarship Officer for Marquette University, Milwaukee, WI. She can be reached by calling 414-288-2046 (800-563-7339) or by e-mail at patricia.baker@mu.edu. CPT Baker was the former commander of B/2-4 AVN, 4ID in Iraq.

NCO CORNER shop ta

Aviation NCOs are invaluable in operational theaters. If it weren't for their dedication, no aircraft would get off the ground to take the fight to the enemy. Below is a compilation of lessons learned by several NCOs that just returned from deployments to Afghanistan and Iraq. Read on and keep these stories in mind as your unit heads overseas!

Wear Gloves ... It's Hot!

Everyone knows the desert is hot, but you can't imagine just how hot it really is until you get there. We left for Kandahar, Afghanistan, from Fort Campbell, KY, where a blanket of snow covered the ground. Kandahar was the total opposite, though—hot and sunny. Everyone was told to drink water and watch out for their buddy because of the heat.

One factor got overlooked, however. An airframe exposed to sunlight can get extremely hot. I found this out the hard way while assembling aircraft parts left out in the sun.

We had put together one aircraft and were starting to assemble a second. I reached for the aircraft's stabilator, which was bubble-wrapped to protect it during shipment. After I grabbed it I quickly tried to let it go, because it was scorching hot! That definitely didn't happen in Fort Campbell in the winter. I lost about two layers of skin off my fingers from grasping the hot metal. After my injury, it became standard for personnel to wear gloves whenever touching an aircraft during daylight hours—no exceptions. We quickly forget in "real world" operations things we take into consideration during planning and training, such as the greenhouse effect on aircraft. These oversights can lead to some pretty painful lessons learned. ♦

—Anonymous

Talk To Your Leaders

During my tour in Afghanistan, I was the platoon sergeant for an AH-64A helicopter battalion. I had to put my Soldiers on 12-hour shifts because of the increased OPTEMPO. This extended work schedule really isn't a problem unless Soldiers become inundated with extraneous tasks. Every minute is precious to a crew working an extended shift, so even the smallest additional duty can set the stage for a fatigue-related accident.

My Soldiers worked two 12-hour shifts—one in the day, and one at night. They each got about 6 hours of sleep per 24 hours. Their meals took an average of 45 minutes each, including wait times. They spent about 2 hours on personal hygiene during the morning and at night. This schedule left about 2½ hours of personal time for each Soldier.

Keep in mind this was the "perfect world" schedule, with everything running smoothly and minimal distractions. But, as we all know, perfect world and minimal aren't in the wartime vocabulary. Although there were no major operations underway or bullets flying, the missions kept coming and maintenance continued to increase. A 13-hour day soon became necessary so a good handover could be conducted at the end of each shift.

Around this time, the leadership decided to begin organized PT since no one was shooting at us. But, because of the double-extended shift, my Soldiers were giving up more and more of their time already, and sleep was taking a hit. All told, PT was adding 2 more hours to the duty day. The MTOE was filled properly, but we simply didn't have enough time to fix the aircraft.

The company leadership tried different approaches, but nothing worked. The "head shed" began to see it our way after we gave them a detailed timeline. Unnecessary missions were cut, and organized PT was called off until the OPTEMPO slowed down again.

If you have a problem, come up with a solution and talk to your leaders about your concerns—they will listen! They've been there before. We didn't have to have a casualty before someone listened to us. ♦

—SFC Jason Spinner
Fort Bragg, NC
e-mail Jason.spinner@us.army.mil

Confidence in NCOs

I served as a liaison officer for the V Corps Army Airspace Command and Control (A2C2) element in support of Operation Iraqi Freedom. Our primary missions were to prevent fratricide by creating safe air routes and to communicate with our G-3 air elements. We tracked aircraft with our equipment and also maintained communication with the lower echelons that fell under our control.

I didn't have any prior experience with A2C2, so I had to learn the job hands-on. I quickly learned that coordination and communication were the keys to our success. We had to communicate with the units, and that communication had to be continuous at all times.

Several pilots told me they felt safer without having to worry about fratricide, allowing them to focus on the missions at hand.

We wouldn't approve a fire mission if we weren't sure of an aircraft's position, no matter what the mission entailed or who told us to approve it. It was our job to make sure none of our forces got shot down because of fratricide. During the 6 months I served with V Corps, we had no known or reported cases of fratricide. Several pilots told me they felt safer without having to worry about fratricide, allowing them to focus on the missions at hand. ♦

—SSG Dominique Rollins
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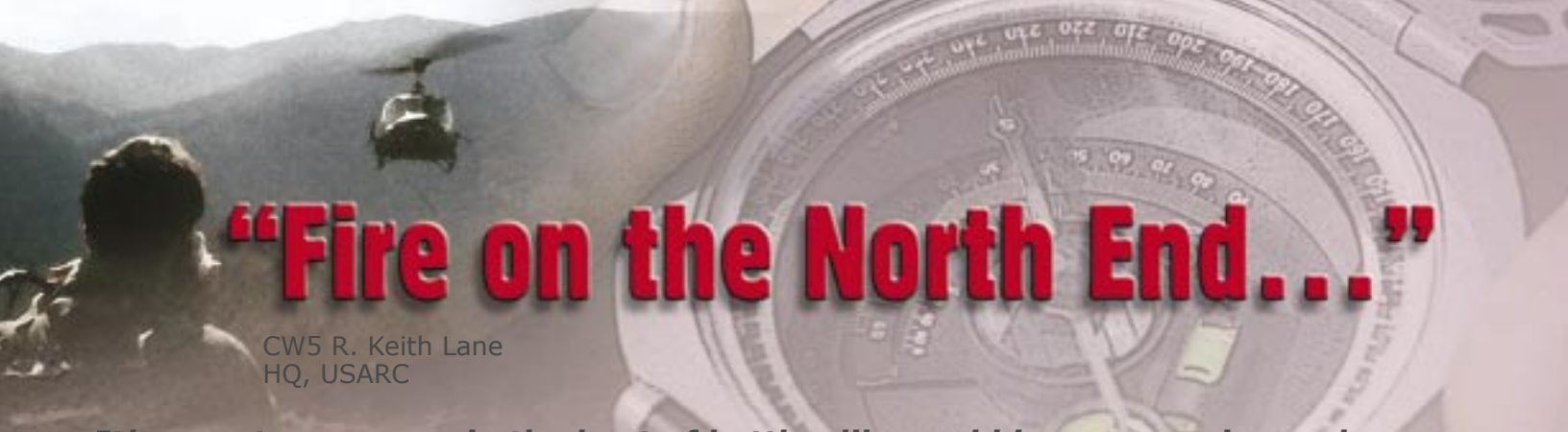

"Fire on the North End..."

CW5 R. Keith Lane
HQ, USARC

It's easy to screw up in the heat of battle—like grabbing a magazine and trying to shove it in backward or upside down, or saying your call sign is Red 26 when it's really Red 16. It's even been known that an aviator would run out to his aircraft, crank it up, and sit there waiting on his crew to catch up with him ... only to find his crew is waiting for him in the correct aircraft.

Such was the day for a young infantryman on a clear day in 1968 in the Central Highlands of the Republic of Vietnam. I know it was a long time ago, and certainly not in the desert, but lessons learned seem to bear repeating from time to time no matter where you are or what the climate is. So here's a "war story" from way back then.

We were flying a UH-1C gunship north of Ban Me Thuot, Republic of Vietnam, on a mission to support the 23d ARVN Division when the call came over the radio to contact so-and-so on such-and-such frequency fox-mike. I made the call, and a frantic voice came over pleading for some immediate assistance. We were 5 minutes away. Our aircraft could carry only 14 2.75-inch rockets and 3,000 rounds of mini-gun ammunition, and even then we had to make a running takeoff to get in the air. But this time our help was sorely needed, and we had another hour before we had to go back for fuel.

The site was a small Montagnard village of several thatched roof huts and one long house in a relatively large clearing in the middle of the jungle. The frantic voice came back: "Fire on the north end of the long house. We're on the south end. There's a bunch of VC and we're getting hit pretty bad!" We also could hear firing in the background.

Having the advantage of a compass in the aircraft, I knew which direction was north and south, but on the ground in the middle of a firefight, sometimes directional references get screwed up and he didn't have any smoke. I confirmed we would fire on the north end of the long house; I got the confirmation and fired. Since I was in the left seat I was the triggerman, and as soon as I pulled it we heard, "Cease fire, cease fire. You're firing on us! Fire on the other end!"

"Roger, we will fire on the *south* end of the long house." I adjusted the sight and pulled the trigger. "Keep it up! That's it!"

We never learned whether we inflicted any casualties on our Soldiers, but the lesson was clear: Always confirm the requested support, verify you know what you're doing, and if possible verify if the ground folks know what they're asking for. The last part is very difficult for us in the air, and overflying the target for visual verification isn't the smartest thing to do. The best thing is to ask the ground people to confirm what they asked you to do.

In those days, things were pretty lax in how we conducted ourselves on the radio and in how we flew our aircraft. Those were the days that developed the procedures we know today—the same ones that have reduced the number of incidents like mine.

In a combat situation, there are two kinds of support missions as far as the Air Tasking Order is concerned—planned and emergency. Planned missions are submitted

72 to 94 hours in advance. Everything else is emergency, but commanders need to plan for those events and schedule aircraft for emergency support. If they fly, they've fulfilled their mission requirements. If not, it means the ground guys had a good day and the unit cancels the assigned mission numbers.

Usually the attack unit's standing operating procedure (SOP), the supported unit's SOP, and the aircrew training manual (ATM) will tell an aircrew how to conduct close air support (CAS) operations (called close combat attack [CCA] by the Army), but generally the procedures are centered around those explained in this article.

Fratricide: The employment of friendly weapons and munitions with the intent to kill the enemy or destroy his equipment or facilities, which results in unforeseen and unintentional death or injury to friendly personnel.

The nine-line fire support request is passed from the ground troops to their battalion fire support officer and the air liaison officer, an Air Force officer in charge of the (Air Force) tactical air control party (TACP) attached to the battalion. The TACP forwards the request through the Air Force air support request network to the air support operations center (ASOC) at corps. Brigade and division TACPs disapprove of requests by exception, meaning they listen to the request and if they disapprove they will say so, as they may have another kind of support in mind, like artillery, rockets, or missiles. Or, there may be another operation in the area that requires close coordination before releasing a CAS mission. If they say nothing, they approve. The ASOC passes the request to the joint air operations center, which answers to the theater-level joint forces air components commander.

If the mission is assigned to an Air Force element, they must usually have clearance from an Air Force officer before release of any weapon. A few Army officers have had the training and are certified to direct Air Force CAS.

If an Army element is assigned and CCA employed when communication with the ground element is established, the attack team checks in with the requesting ground element. The ground element then makes a direct fire request, wherein the requestor uses a portion of the standard nine-line request and basically talks the attack aircraft to the target. Therein lies the problem if the correct procedures are not used. Here's how it should go:

Attack team check-in:

- Provided by attack team
- Attack team disposition
- Elements
  1) Aircraft location
  2) Team composition
  3) Munitions available
  4) Station time
  5) Night vision device capability and type

The ground element then gives the direct fire request:

- Tells the attack team what is needed
- Orients the team to the enemy
- Description
- Location
- Describes methods of marking target and friendly positions

Further broken down, the direct fire request elements are:

- Friendly location and method of marking (the ground element location)
- Heading to target (magnetic)
- Distance to target (meters)
- Target description
- Target coordinates
- Target marking method
- Remarks

The SOP dictates who has the authority to approve a fire request; generally the more urgent the request, the lower that authority goes. A risk assessment by the attack team must be made based on the information they have and what they can see, albeit a hasty one. These days the attack team usually can see better than a ground spotter calling at a distance from the target. The attack team must verify what they are told with what they can see.

The process hasn't changed a lot in 36 years, but it is much more professional and has made the difference in protecting our troops—if we use the correct procedures. ♦

—CW5 Lane is the Army Reserve Command Safety Officer at Fort McPherson, GA. He may be contacted at (404) 464-8838 or by e-mail at Ronald.keith.lane@us.army.mil.

FOD Kills

WO1 Rick Kimberlin
Kentucky Army National Guard

I was deployed to Bosnia-Herzegovina in the summer of 1996. Back then I was a Black Hawk crew chief, and our mission was to fly U.S. and foreign dignitaries. The missions were very diverse, so we had to improvise quite a bit. Aircraft maintenance, both scheduled and unscheduled, was performed wherever was convenient at the time. We would always try to do the smart thing and finish maintenance before long missions, but that wasn't always possible.

On one particular day, we had a three-ship mission to transport VIPs to several locations and then back home. These days usually were good for about 4 or 5 flight hours and a 13- to 16-hour duty day. At one of the interim stops—a heavily populated soccer field—our helicopter required gearbox oil samples. The maintenance was routine, and we were soon back to policing up children "wowed" by our machine.

Our VIPs returned, and we then transported them to an airfield well over an hour away. We dropped them off, repositioned the aircraft and shut down, ready for a break. We filled the downtime by tossing a football until we finally succumbed to our MREs.

As all Soldiers know, MRE packages are easier to open with a knife. I didn't have mine, so I asked my battle-rostered crew chief to loan me his multi-tool. He fumbled around in his flight suit for a few moments but couldn't find it. He asked if I'd seen it; I had earlier in the day, but that was when we were checking the aircraft's gearbox at the soccer field. I asked him, "You got it out of the intermediate gearbox area, right?"

I'll never forget the look on his face as my words sank in and registered. We quickly snatched the gearbox cover off and there was his multi-tool—lying next to the tail rotor driveshaft. We'd flown well over an hour across a windy and turbulent mountain pass with that multi-tool beside a MAJOR aircraft component. To our relief, the tool hadn't caused any damage. One of the pilots noticed the commotion and questioned why the cover was back off. We never told him the real reason, but we did inform all the maintenance personnel and managed to keep it "in house."

You've heard this short statement many times before: FOD KILLS. That day, I took it to heart. Don't let your complacency and drive to get the mission done compromise your quality of workmanship. Crew chiefs are probably the most overworked folks in the Army, and their job is important. I know it's hard sometimes, but take your time and have a second set of eyes look behind you. Keep up the good work! ♦

—WO1 Kimberlin wrote this article while attending the Aviation Safety Officer's Course at Fort Rucker, AL. He is a member of the Kentucky Army National Guard in Frankfort, KY. He can be reached by calling (502) 472-6546 or by e-mail at rick.kimberlin@us.army.mil.

Cold Weather Clothing and "Long Johns"

Editor's note: As the winter months approach, the days get shorter, the nights get longer, and they both get much colder. However, this does not keep the Army from training—and field training exercises are a reality for every unit, no matter how cold it is. Cold-weather operations present many hazards that, if not approached correctly, can lead to serious injuries. Fortunately, most cold injuries are preventable if appropriate precautionary measures are taken. The most important individual preventive measure is the proper wear of cold weather clothing.

All aircrew are already issued NOMEX uniforms including flight jackets, and some units are issued the aramid two-piece waffle-weave long underwear, but some are only supplied with their polypropylene polar fleece long underwear. To make the Army's position clear, if your duties are hazardous enough to wear your NOMEX uniform, then they are hazardous enough to NOT WEAR ANY NYLON UNDERGARMENTS. This includes prohibiting wear of the issued nylon base polar fleece while performing flight duties. If your unit does not issue the aramid undergarment, then we suggest a natural fiber undergarment such as wool or cotton, or a blend of each.

Issue aramid undergarments (Nomenclatures)
CWU-43/P DRAWERS, FLYER'S ANTI-EXPOSURE, ARAMID
8415-00-467-4036 (x-small)
8415-00-467-4075 (small)
8415-00-467-4076 (medium)
8415-00-467-4078 (large)
8415-00-467-4100 (x-large)
CWU-44/P UNDERSHIRT, FLYER'S ANTI-EXPOSURE, ARAMID
8415-00-485-6681 (x-small)
8415-00-485-6547 (small)
8415-00-485-6548 (medium)
8415-00-485-6680 (large)
8415-00-043-8375 (x-large)

We are well aware of the off-white color of the high collar on these and can only suggest the Army green wool scarf to wear with these to maintain the camouflage look to the entire uniform. At one time we could recommend the Army green three-button wool sweater, but that sweater is now made of nylon.

Many questions are asked about silk, and if silk is a fire hazard like nylon. No, silk does not present a hazard, but it is extremely thin and when compared to cotton, it does not provide the standoff insulative qualities desired to prevent thermal injury under the NOMEX uniform. Can it be worn in addition to the cotton undergarments? Yes.

The U.S. Air Force is the proponent for the aramid fiber undergarment and it is only contracted in the off-white color. To assist those of us that require something else, the U.S. Navy is currently in the final stages of development of a "Multi-Climate Protection System (MCP)." This is a total system, but of particular interest are the underwear layers consisting of a silk-weight NOMEX, a medium-weight NOMEX fleece, and a heavyweight 200-weight insulation layer. All of these garments are in black, but will not be ready for issue for a few years. The program will not help us this year, but this is to inform you that direct cross service coordination and progress is being made in this venue. ♦

—For more information, contact Mr. Joseph R. Licina, U.S. Army Aeromedical Research Laboratory, Fort Rucker, AL 36362-0577, or e-mail joseph.r.licina@us.army.mil.

NEWS & notes

New Course for UH-60 NCOs!

Beginning November 2003, UH-60 Aviation NCOs may attend the Non-rated Crewmember Instructor Course (NCIC) at Fort Rucker, AL. For more information, contact SFC Mike Kordonowy at DSN 558-4242. Units can also secure slots through their S-3, Course #600-F16. ♦

FY05 Course Dates

Class #	Report	Start	End
05-001	02 Nov 04	03 Nov 04	08 Dec 04
05-002	02 Jan 05	03 Jan 05	02 Feb 05
05-003	14 Mar 05	15 Mar 05	15 Apr 05
05-004	10 May 05	11 May 05	14 Jun 05
05-005	07 Jul 05	08 Jul 05	10 Aug 05
05-006	01 Sep 05	02 Sep 05	05 Oct 05

—CW4 Dan Fessler is the Flight Commander and Standardization Pilot for F Company, 1-212th Aviation, Fort Rucker, AL. He can be reached by calling DSN 558-4282 (334-255-4282) or e-mail dan.fessler@us.army.mil.

Vessel Shipment of Helicopters

Effective immediately, top deck shipment of Army helicopters on ocean and sea-going vessels is prohibited. Top deck shipment exposes helicopters to extreme environmental elements that can cause corrosion and structural damage.

When deploying by vessel, all helicopters are required to be preserved and prepared for shipment IAW the instructions of the appropriate preparation for shipment manual.

The appendix titled, "Heat Shrink Film Helicopter Protective Covering," of the appropriate shipment manual should be followed when installing the shrink wrap film. Shrink wrap protective covering must be installed on Army helicopters in preparation for vessel shipment. ♦

—For assistance contact Mr. Steve Geashel, U.S. Army AMCOM, Packaging Branch, AMSAM-MMC-MM-DP, Redstone Arsenal, AL 35898, DSN 746-9431 (256-876-9431), e-mail steven.geaschel@redstone.army.mil.

Aviation and Standardization Conference

The Aviation and Safety Division of the Army National Guard announces their annual Aviation and Standardization Conference from 30 November to 2 December 2004 at the Professional Education Center near Little Rock, AR. The target audience for this conference is Standardization Officers/NCOs and Safety Officers/NCOs. The focus for this year's conference will be on training and safety issues with emphasis on deployment lessons learned. An official conference announcement memo will be sent out prior to the end of September. ♦

—For more information, contact CW5 Gilbert Wright, NGB-AVS-SA, DSN 327-7735 (703-607-7735), or e-mail gilbert.wright@ngb.army.mil.

Joey Reassigned to Covert Unit

The "Soldier" of safety—the "roo" of risk reduction—the "magnificent marsupial of menace management"—has left the U.S. Army Safety Center.

In a surprise announcement, Director of Army Safety BG Joseph Smith stated, "We took a leap of faith in bringing Joey to the Center. We felt Joey would give the Center a 'kinder, gentler' face—one that would inspire Soldiers to send in their personal experience safety stories and any safety questions."

Despite great expectations, all has not gone as planned. BG Smith explained, "While e-mails to Joey poured in at first, they have 'tailed off' in recent months. The Army must get at least 100 percent from each Soldier, so we felt it was time for him to get hopping and approved his request for reassignment. While we can't tell you where he is, we can say he's conducting covert operations in a location where he can easily blend in.

"We will miss Joey, but every Soldier has to go where he will do the most good." BG Smith said. ♦

Accident Briefs

Information based on preliminary reports of aircraft accidents

AH-64

A Model

■ **Class A (Damage):** Aircraft experienced loss of altitude during flight and contacted the ground, landing in a ravine. The crew was able to egress before a post-crash fire began. The pilot in command suffered minor injuries and was treated and released; the pilot suffered significant injuries and was medically evacuated. The aircraft was destroyed.

■ **Class C:** Aircraft contacted terrain after experiencing loss of power during a turning maneuver at high altitude. The tail wheel strut, aft tail boom sheet metal, lower Doppler fairing, horizontal stabilator, and #2 engine secondary nozzles suffered damage. The aircrew jettisoned the aircraft's external stores (Hellfire racks and rocket pods) in an attempt to avoid impact.

D Model

■ **Class A:** Aircraft struck trees while in an undetected descent. The crew was unable to regain control of the aircraft and subsequently crashed. Both crewmembers were fatally injured.

CH-47

D Model

■ **Class C:** Aircraft was returning to the airfield when the crew heard a loud "bang" and felt the aircraft shudder. The #1 engine then caught fire. The instructor pilot initiated emergency procedures, landed the aircraft, and performed an emergency shutdown. Post-flight inspection revealed the exhaust tail cone separated in flight.

OH-58

D(R) Model

■ **Class C:** The crew reported a loss of power and smoke in the cockpit accompanied by a loud "bang" while hovering on the ramp for takeoff. The crew performed a hovering autorotation from 3 feet and executed an emergency shutdown. The aircraft experienced a hard landing, causing the skids to spread and damaging the lower wire strike protection system.

TH-67

■ **Class B:** Student pilots were performing a solo approach to a stage field and contacted the ground short of the tarmac. The aircraft's tail boom was nearly severed. Other damage included a separated transmission, spread skids, and airframe and main rotor system damage.

UH-60

A Model

■ **Class D:** Aircraft contacted a tree branch during a night vision goggle confined area approach. The aircraft was flown to the local Army Aviation Support Facility and landed without further incident. Damage to three rotor blade tip caps was discovered on post-flight inspection. Two of the tip caps were replaced.

L Model

■ **Class C:** Aircraft was trail in a flight of five during air assault mission training. The crew performed a left upslope landing with no forward airspeed and brakes locked during the third landing iteration (no troops onboard). The aircraft's cockpit airbags deployed as the right wheel touched the ground during landing. The crew landed the aircraft without further incident. Both pilot display units, the copilot's airspeed indicator, and the pilot's horizontal situation indicator were damaged.

C-12

T3 Model

■ **Class B:** Aircraft experienced a dual-engine internal turbine temperature exceedance during the final phase of climb-out at 9,000 to 10,000 feet above ground level. No other details were provided.

RQ-7

Shadow Model

■ **Class B:** Air vehicle was destroyed after initiating a nose-down dive upon takeoff, turning sharply, and inverting to impact with the ground. The air vehicle was undergoing an acceptance test flight.

■ **Class C:** Air vehicle veered right off the runway upon takeoff. Inspection revealed additional propeller and engine component damage.

■ **Class C:** Air vehicle experienced engine failure during landing. The crew attempted to restart the engine without success and deployed the parachute. The air vehicle impacted the ground.

Editor's note: Information published in this section is based on preliminary mishap reports submitted by units and is subject to change. For more information on selected accident briefs, call DSN 558-9552 (334-255-9552) or DSN 558-3410 (334-255-3410).

Where to Store Gear?

Only store gear where authorized—Follow your –10!